syndrome children, Rapp highlights the disjunction between technological advance in genetics and biotechnology and the human response of families who care for such children. A further chapter deals with "biomental" or "biosocial" conditions, notably MCS (multiple chemical sensitivity) and finds that in the light of conflicting interests and under-funded research any explanation of these sociomedical disorders is likely to be temporary and locally determined. The last two essays deal with organ transplantation and unpack the problem of the dichotomy of the "gift of life" that organ donation from brain dead persons presents, versus any sentiments concerned with keeping dying patients intact—a dilemma that is much felt even within the medical profession. Approaches differ between the US and Japan. The ethical dilemma is compatible but at present there are various solutions. Ethics are generally more implicit than overt but it is agreed that they are diffusely socially determined. The final essay, which considers the ethics involved in transplant procuring whether by gift, selling or cadaver donation, finds that regulations aimed at safeguarding certain rights may themselves infringe customary perceptions of what is moral. Some of the problems would benefit from an anthropological approach that takes account of the specificity of small local communities.

There are no final answers in this book, but the at times diverse essays bring together highly topical discussions about the rights and wrongs of a world that is just opening up.

C R Barber

Animals in Research: For and Against

L Grayson. The British Library, 2000, £35, pp 300. ISBN 071230858X

The use of animals for the purpose of scientific research is an emotive subject. The moral arguments often exhibit polarised positions: the scientific demand for absolute freedom of research, and the abolitionist demand for a total ban on all animal experiments. At one extreme are those who argue that research on animals is essential in the battle against disease, and on the other extreme it is argued that the cost in terms of animal suffering is too high and that if experiments were prohibited medical researchers would find some other means of ensuring scientific progress. The rhetoric employed is also suggestive of a polarity: experimenters are accused of cruelty and indifference, whereas campaigners on behalf of animals are accused of irresponsibility and insensitivity towards the wellbeing of humans. Yet to ask which side is right is to betray a misunderstanding of the complex nature of the debate, in which a plethora of interrelated ethical and scientific issues find expression in a wide spectrum of viewpoints.

One of the strengths of *Animals in Research* is that Grayson recognises the complexity of this issue, and in the opening chapter, which surveys the moral and philosophical debate over animal research, there is an appeal for constructive listening. Avoiding either extreme, Grayson opens with a comprehensive survey of the many different standpoints that have found expression in the animal research debate. The second and third chapters focus on public perspectives on animal research and the development of legislation and regulations since the Victorian period. The fourth chapter investigates issues that have drawn the attention of scientists and animal rights and welfare groups since the 1886 act which dealt with research on animals.

As in most ethical debates neither side offers support for needless suffering, and the way forward lies in the consideration of ways to minimise any necessary suffering both in general and individually. Chapters five and six therefore address the three Rs (replacement, reduction, and refinement) which have emerged as objectives on which otherwise disparate parties can agree. Replacement and reduction seek to minimise the number of animals used in research and refinement is bound up with the minimisation of pain, distress and lasting harm inflicted upon animals. This discussion is the most significant part of the book, as it indicates the possibility of dialogue and consensus among medical scientists, animal welfare campaigners, government bodies, teachers, and regulatory agencies. Grayson recognises that medical scientists are ethical and shows how the research community have demonstrated that scientists are taking legitimate concerns about animal welfare seriously. She refers to the British Association for the Advancement of Science which maintains that continued research involving animals is essential for the conquest of many unsolved medical problems, but recognises that those involved must respect animal life, using animals only when essential, and should adopt alternative methods when available. Grayson also refers to a survey of British doctors in 1993, which indicated 94% agreement that animal research was important to medical advance, while 92% favoured more investment in the development of non-animal alternatives (page 36).

The final two chapters look to the future. Grayson argues that the debate on animal research is likely to intensify, with concern over transgenic animals and the use of animals as organ transplant sources. For those who are interested in the ongoing debate over animal research the final chapter provides comprehensive details of relevant organisations and web sites.

This is an excellent introduction to the animal experiment debate. Each chapter is carefully balanced and is free from the emotive rhetoric which so often clouds the arguments. Moreover, there are summaries, lists of publications, and information about interest groups which are relevant to each standpoint covered in the book. *Animals in Research* is an essential source for teachers and researchers in the veterinary sciences, and it will be of considerable value to the ethicist who is concerned with the broader moral issues related to medical research and human wellbeing.

D Lamb

The Foundations of Christian Bioethics

H Tristham Engelhardt Jr. Swets & Zeitlinger, 2000, 95 DF, US$39.95, pp 414. ISBN 902651557Xp

In this book, H Tristram Engelhardt Jr outlines his interpretation of Christian bioethics. His branch of Christianity, termed "traditional Christianity", is described as "the Christianity of the first millennium". Authority is derived from the church fathers (whose works are continually cited) and from the church community, in accordance with "the Spirit" (this is contrasted with Western Christianity's use of scriptures and philosophical theology).

In the first half of the book (chapters 1–4) Engelhardt describes the contemporary moral condition, characterised by moral diversity and fragmentedness. He bemoans the eroding effect of pluralism on moral values and the lack of mechanisms to distinguish between opposing value systems. He terms the present state of affairs as "liberal cosmopolitanism" and argues that the only available moral authority derives from the "principle of permission"—that is, moral authority legitimised by the autonomous choices of those who collaborate; it is procedural rather than objective. In the course of these chapters Engelhardt proceeds comprehensively and persuasively to argue that "liberal cosmopolitanism" is not morally neutral but is a powerful moral framework itself—upholding the values of liberty, equality, autonomy, and toleration—and requiring adherence and belief.

Engelhardt's thesis is that "liberal cosmopolitan" ethics, and by extension bioethics, is fundamentally flawed, because the search for universality has sacrificed moral authority and hence moral content. On these grounds he dismisses both secular and "post-traditional" Christian ethics and bioethics. "Traditional Christianity", in contrast to "liberal cosmopolitanism", embraces authority (mediated through noetic experience, ie experiential knowing of God) and exclusivity (terms such as "fundamentalist" and "cult" he dismisses as political; intended to malign those who are not of the "liberal cosmopolitan" majority). Consequently, "traditional Christianity" is in conflict with "liberal cosmopolitanism" since it endorses patriarchal and sexist views which are offensive to the liberal majority, and as a result traditional Christians find themselves in a hostile environment.

The second half of the book (chapters 5–8) focuses upon the practical implications of adopting this version of bioethics. There are few surprises here, as the practices which are endorsed and forbidden are broadly similar to other conservative Christian traditions. For example, contraception is forbidden, as is abortion and prenatal testing (there is no ensoulment in "traditional Christianity", therefore, disposal of zygotes and embryos is "murder", as is abortion in general). In addition, little assisted reproduction is allowed: artificial insemination by husband is permissible if the wish for a child does not interfere with the couples' spiritual quest and if there is no third-party involvement (sperm must be collected during intercourse or stimulation by the wife and the husband must carry out the insemination procedure). Of particular interest for bioethicists in this section are the differences which Engelhardt highlights between "traditional Christianity" and more familiar Christian approaches. For example, he rejects frequently cited Roman Catholic doctrines, such as the "doctrine of double effect" and arguments which appeal to biological "naturalness".

This book contains many interesting insights (though perhaps more for theologians and philosophers than for bioethicists), but would be unlikely to satisfy a reader looking for engagement with the practical dilemmas of bioethics. However, since Engelhardt's intention is to return us to a first millennium Christianity, this is not entirely surprising. His focus on the first millennium leads him to leave out some subsequent advances which have a bearing on his argument; for example, the current philosophical revival of moral realism is not mentioned. This said, the book has much to recommend it, such as an insightful analysis of difficulties which attach to moral pluralism and revealing comments about the philosophies of Hegel, Kant and